

CLAIM AMENDMENTS

1. (currently amended) An electron source for an X-ray scanner comprising:
at least one electron emitter in a first plane ~~electron emitting means defining a plurality of electron source regions;~~
a plurality of extraction elements in a second plane, wherein the first plane and second plane are substantially parallel and separated by a contiguous space, wherein said extraction elements are substantially perpendicular to the at least one electron emitter, and wherein a space between two adjacent extraction elements and said at least one electron emitter define a source region~~an extraction grid defining a plurality of grid regions each associated with at least a respective one of the electron source regions;~~ and
a controller that applies an electrical potential to certain of said plurality of extraction elements wherein said application of the electrical potential causes electrons to be moved from a first source region to a second source region~~control means arranged to control the relative electrical potential between each of the grid regions and the respective source region so that the position from which electrons are extracted from the emitting means can be moved between said source regions.~~
2. (canceled)
3. (currently amended) An electron source according to claim 2 1 wherein the electron emitter ~~emitting means~~ comprises an elongate emitter member ~~and the grid elements are spaced along the emitter member such that the source regions are each at a respective position along the emitter member.~~
4. (currently amended) An electron source according to claim 2 1 wherein the controller~~control means~~ is arranged to connect each of the plurality of extraction elements ~~grid elements~~ to either an extracting electrical potential which is positive with respect to the emitting means ~~electron emitter~~ or an inhibiting electrical potential which is negative with respect to the emitting means ~~electron emitter~~.
5. (currently amended) An electron source according to claim 4 wherein the controller ~~control means~~ is arranged to connect the extraction elements ~~grid elements~~ to the extracting potential successively in adjacent pairs so as to direct a beam of electrons between each pair of extraction elements ~~grid elements~~.
6. (currently amended) An electron source according to claim 5 wherein each of the extraction elements ~~grid elements~~ is connected to the same electrical potential as either of the extraction elements ~~grid elements~~ which are adjacent to it.
7. (currently amended) An electron source according to claim 5 wherein the controller ~~control means~~ connects the extraction elements ~~grid elements~~ to either side of an adjacent pair to the inhibiting potential while each of said adjacent pairs is connected to the extracting potential.

8. (currently amended) An electron source according to claim 7 wherein the controller ~~control means~~ connects all remaining extraction elements ~~grid elements~~ to the inhibiting potential while each of said adjacent pairs is connected to the extracting potential.
9. (currently amended) An electron source according to claim 3 wherein the extraction elements ~~grid elements~~ comprise parallel elongate members.
10. (canceled) ~~An electron source according to claim 9 wherein the emitting member extends substantially perpendicularly to the grid elements.~~
11. (currently amended) An electron source according to claim ~~2~~1 wherein the extraction elements ~~grid elements~~ comprise wires.
12. (canceled)
13. (currently amended) An electron source according to claim ~~2~~1 wherein the extraction elements ~~grid elements~~ are spaced from the electron emitter ~~emitting means~~ by a distance approximately equal to the distance between adjacent extraction elements ~~grid elements~~.
14. (currently amended) An electron source according to claim ~~2~~1 further comprising a plurality of focusing elements arranged to focus beams of electrons after they have passed the extraction elements ~~grid~~.
15. (original) An electron source according to claim 14 wherein the focusing elements are elongate.
16. (currently amended) An electron source according to claim 14 wherein the focusing elements are parallel to the extraction elements~~grid elements~~.
17. (currently amended) An electron source according to claim 16 wherein the focusing elements are aligned with the extraction elements ~~grid elements~~ such that electrons passing between any pair of the extraction elements ~~grid elements~~ will pass between a corresponding pair of focusing elements.
18. (currently amended) An electron source according to claim 17 wherein the focusing elements are spaced at equal intervals relative to the extraction elements~~grid elements~~.
19. (currently amended) An electron source according to claim 14 wherein the focusing elements are arranged to be connected to an electric potential which is positive with respect to the electron emitter.
20. (currently amended) An electron source according to claim 19 wherein the focusing elements are arranged to be connected to an electric potential which is negative with respect to the extraction elements~~grid elements~~.

21. (currently amended) An electron source according to claim 14 wherein the controller ~~control means~~ is arranged to control the potential applied to the focusing elements ~~thereby in order to~~ control focusing of the beams of electrons.
22. (previously presented) An electron source according to claim 14 wherein the focusing elements comprise wires.
23. (canceled)
24. (currently amended) An electron source according to claim 4 wherein the extraction elements ~~grid elements~~ are spaced from the electron emitter such that if a group of one or more adjacent extraction elements ~~grid elements~~ are switched to the extracting potential, electrons will be extracted from a length of the electron emitter ~~member~~ which is longer than the width of the source regions defined by said extraction elements ~~said group of grid elements~~.
25. (currently amended) An electron source according to claim 24 wherein the extraction elements ~~grid elements~~ are spaced from the electron emitter ~~member~~ by a distance which is at least substantially equal to the distance between adjacent extraction elements ~~grid elements~~.
26. (currently amended) An electron source according to claim 24 wherein the extraction elements ~~grid elements~~ are spaced from the electron emitter ~~member~~ by a distance of 5mm.
27. (canceled)
28. (currently amended) An electron source according to claim 24 wherein the extraction elements ~~grid elements~~ are arranged to at least partially focus the extracted electrons into a beam.
29. (currently amended) An electron source according to claim 1 wherein the source regions are formed on respective electron emitters ~~emitting members~~ which are electrically insulated from each other and the controller ~~control means~~ is arranged to vary the electric potential of the electron emitters ~~emitting members~~ to control said relative electric potentials.
30. (currently amended) An electron source according to claim 29 wherein the extraction elements ~~grid is~~ are held at a constant potential.
31. (currently amended) An electron source according to claim 30 further comprising focusing elements held at a constant potential.
32. (currently amended) An electron source according to claim 31 wherein the focusing elements are held at the same potential as the extraction elements ~~grid~~.
33. (currently amended) An electron source according to claim 31-wherein each focusing element is spaced at a distance between and in front of each adjacent pair of electron emitters ~~members~~.

34. (currently amended) An electron source according to claim 1 wherein the controller ~~control means~~ activates each of the source regions in turn.
35. (currently amended) An electron source according to claim 1 wherein the controller ~~control means~~ controls the electric potentials of the source regions and the extraction elements ~~grid regions~~ to extract electrons from a plurality of successive groupings of said source regions.
36. (currently amended) An X-ray tube comprising ~~The the~~ electron source of claim 1 ~~wherein said electron source and at least one anode comprise an X-ray tube.~~
37. (currently amended) The at least one anode according to claim 36 further comprising an elongate anode arranged such that beams of electrons produced by different extraction elements ~~grid elements~~ will hit different parts of the anode.
38. (cancelled)
39. (cancelled)
40. (cancelled)
41. (cancelled)
42. (cancelled)
43. (cancelled)
44. (cancelled)
45. (cancelled)
46. (cancelled)
47. (cancelled)
48. (cancelled)
49. (cancelled)
50. (cancelled)
51. (cancelled)
52. (cancelled)
53. (cancelled)

54. (currently amended) An electron source according to claim 29 wherein the electron emitter ~~emitting members~~ comprise emitter pads supported on an insulating emitter block.
55. (original) An electron source according to claim 54 further comprising a layer of conductive material formed on the insulating block to provide electrical connection to the emitter pads.
56. (original) An electron source according to claim 55 wherein the emitter pads are applied onto the layers of conductive material.
57. (previously presented) An electron source according to claim 54 further comprising a heating element adjacent to the emitter block.
58. (original) An electron source according to claim 57 wherein the heating element comprises a block of insulating material with a layer of conductive material applied to it forming a heating element.
59. (previously presented) An electron source according to claim 54 further comprising a connecting element providing electrical connections for each of the emitter pads and flexible connecting elements providing electrical connections between the connecting element and the emitter block.
60. (original) An electron source according to claim 59 wherein the connecting elements are arranged to accommodate relative movement of the connecting element and the emitter pad caused by thermal expansion.